NML NEWS

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DR. VISHWANATH ANANT ALTEKAR
(5 March, 1925 - 1 September, 1989)

DOWN THE MEMORY LANE

1925 **Vishwanath Anant Altekar**, son of eminent Professor Sadasiva and Vasudha, was born on 5th March 1925 at Nagpur.

1946 Obtained B. Sc. in Metallurgical Engineering from Banaras Hindu University.

1946 Joined Banaras Hindu University as Lecturer continued till 1956.

1950 Obtained M. Sc. Metallurgical Engineering degree from Colorado School of Mines, U.S.A.

1957 Joined University of Bombay as Reader, continued till 1962.

1962 Became Professor of Metallurgical Engineering, University of Bombay and continued till 1969.

1967 Received Kamani Gold Medal for the best paper on 'Selective Chlorination of Ilmenite in Fluidised Bed Reactors'.

1968 Honoured with 'Metallurgist of the Year' Award by Ministry of Mines and Metals, Government of India.

1969 Joined as Director of National Metallurgical Laboratory, Jamshedpur.

1970 Received Invention Promotion Award for 'Process of Electro-thermal zinc dust smelter'.

1973 Received Distinguished Alumunus Award from Banaras Hindu University.

1977 Became President of the Indian Institute of Metals.

1979 Received Distinguished Achievement Award from Colorado School of Mines, U.S.A.

1980 Honoured with Sir Ganga Ram Memorial Medal for his paper on 'Multistage absorption of nickel by lignite & related studies.'

1985 Retired from National Metallurgical Laboratory on 4th March.

IN THIS ISSUE

from the editors

It is difficult to believe that Prof. Viswanath Anant Altekar is no more ! This distinguished metallurgist of the country and the longest serving Director of NML left rather prematuredly for his heavenly abode. NML News shares this hour of grief with the family members of Prof. Altekar and also with all the employees of NML. In whatever capacity Prof. Altekar served during his professional life, he brought honour and dignity to the office. It was a unique privelege for this laboratory and its employees to have been associated with this doyen of Indian metallurgy for sixteen long years, beginning 1969. He had kept himself very active to the last day. It would be very long before the loss to the industrial world in the demise of Prof. Altekar is recouped. We are however sure that the inspiration he has left behind would still continue to be a beacon of guidance for all of his followers, particularly for all of us in this laboratory. We pray to the Almighty for the peace of this great soul.

The 5th Research Council meeting of NML held at CGCRI, Calcutta was special in many ways. Not only were all the RC members present in this meeting but additionally three directors from other laboratories were present alongwith Dr. A. P. Mitra, the Director General. Prof. S. Banerjee, in his presentation focussed on the vital theme of personnel and its development. It can never be over emphasised, how crucial are the personnel for a research laboratory, and the various issues and suggestion pertaining to their recruitment and assessment, as analysed by Prof. Banerjee , certainly merit the consideration of CSIR. A healthy trend was the comprehensive discussion and focus on a few selected research projects. This allows the members and others to take a closer look, at some of the TAPs and therefore interact more meaningfully. We are further sure that for the younger scientists too this RC presented an ideal forum for presenting their interesting ideas and results.

This year seems to augur well for the NML scientists as they gain recognition professionaly at the national level. Dr. Inder Singh has bagged the prestigious Mascot Award for his contributions to corrosion science. Dr. D. D. N. Singh of the 'Metasave ' eminence has now been selected for Young Scientist Award again for his work in corrosion science. NML News share this moment of joy with our colleagues and wishes them many more laurels in the years to come. Let us hope this will provide the right fillip for other colleagues as well to bring glory to NML.

PEER REVIEW MEETING

The Peer Review Meeting of NML was held on 17th July, 1989 at CSIR Guest House, Calcutta under the Chairmanship of Dr. A. P. Mitra, DG, SIR.

The following invitees were present :

Dr. A. Gopalkrishnan, Dr. A. Haque, Dr. B. K. Sarkar, Dr. S. C. Pakrashi, Mr. R. N. Bhargava and Mr. Hem Raj.

NML was represented by :

Prof. S. Banerjee, Mr. K. N. Gupta, Dr. O. N. Mohanty, Mr. N. Chakravorty, Mr. D. M. Chakrabarty, Mr. Premchand, Dr. Amitava Roy, Mr. S. K. Roy, Mr. P. R. Shastri and Mr. T. K. Ghoshal.

Prof. Banerjee, the Director, NML, in his presentation briefly touched upon the various problems confronting the Laboratory.

He also dwelt on the master-plan being contemplated to streamline the location of the various division and facilities of the laboratory. Prof. Banerjee then spoke about the various organisational reforms, R & D achievements, clearance of huge backlogs etc., that have taken place at NML over the past three years. A detailed account of the definition of the different types of R & D programmes being pursued at NML with special emphasis on the Relevance and Excellence oriented programmes and their achievements was given. Some of the achievements of the three ongoing Thrust Area Projects (TAPs) were highlighted by him. Prof. Banerjee also appraised the members of the launching of a fourth one on Component Integrity Evaluation programme (CIEP).

Prof. Banerjee also touched upon the performance indicators over the past five years and expressed NML's determination to improve upon the gains made over the last three years, particularly in the areas of (i) licence agreements executed (ii) patents filed and (iii) impact factor of research papers. He also indicated the improving status of External Cash Flow (ECF).

While discussing the impact of the novel concept of Interactive Projects, he cited the example of NML's 'Metasave' which fetched a lumpsum premium of Rs.36.00 lakhs, shared equally between NML and TATA-STEEL. The achievements on the other two categories of relevance-oriented projects viz., Sponsored Investigation Projects (SIP) and Sponsored Research Projects (SRP) were also dealt with by him.

Prof. Banerjee also spoke on the Excellence-Oriented Exploratory projects (EXP) which are totally driven by scientific and technological quest of the scientists and are funded internally. Directly, they lead to excellent publications and/or patents and indirectly, they have the potential to graduate into larger projects such as TAP's, SRP's etc.

In conclusion, Prof. Banerjee said that NML still has to negotiate with steep climb, which he hoped would be accomplished on the strength of its changing work culture, redefined R & D programmes, organisational reforms and the growing credibility with the user agencies.

Dr.Rama Rao in his comments on NML's activities and orgnisation, appreciated the achievements of NML over the last two years. He emphhasised that under the present vastly improved R & D atmosphere at NML, the Laboratory deserved all-out support from the RC and the CSIR-HQs to remove any obstructions in its path of progress. Regarding difficulties faced in Transfer of Technology by NML, Prof. Rama Rao adviced that the ground should be prepared well in new materials through 'microstructural designs' and the CIEP.

Dr. A. P. Mitra, in his opening remarks made the following points while initiating discussions on Director's presentation:

--- In view of the recommendations of the Review Committee, CSIR should now earn 33 1/3 % of its budgeted expenditure from external sources by 1991. Presently, the earnings from external sources were around 26 % of the budget.

--- CSIR already had a well-established S & T base to achieve the target. What was needed was clearly defined programmes, to suit the requirement. During the Seventh Plan, CSIR initiated this approach and obtained encouraging results. During the Eighth Plan, the same basic approach would continue.

--- Presently, besides the laboratory Thrust Area Programmes, the CSIR was pursuing the following four types of programmes :

* Societal/Technology Mission
* National S & T Programmes
* CSIR Missions Programmes
* New Major Facilities

--- The experiment starte d with the last Peer Review of allocating consolidated funds for several year at a time and devolution of almost all powers to the laboratories had yielded rich dividends. Many laboratories improved their performance considerably as measured by the indicators evolved by the CSIR.

--- The performance of NML is commmendable - NML now stands as one of the best laboratories of the CSIR and he hoped that it would not only maintain but improves its creditable pace of progress.

--- The laboratories should now set their ECF targets at 20 % more than that of previous year. The main aim should, of course, be to pursue clearly defined programmes of the laboratory with a view to attaining excellence and not merely to increasing the ECF. The improved credibility of the CSIR, built over the past few years, should be maintained and further improved.

--- On Personnel Policy, the laboratories were advised to grow people with requisite expertise. Young and qualified personnel could be recruited as QHF's, RA's, RF's etc. and after allowing them to grow in one specialised area, they could be absorbed in the CSIR system. This would help achieve the CSIR's target of doubling the S & T manpower by 1995.

--- Consolidation and modernization of existing facilities would be encouraged; instead of diversion of resources to new buildings and new centres. At least 40 % of the total funds allocated by the CSIR to the laboratories, should be spent only on R & D programmes.

Dr. A. P. Mitra then invited the peers to give their comments. The following points emerged out of the discussions that followed:

o R & D expenditure of the country, as a percentage of the GNP should be increased. Increased per capita expenditure on S & T is necessary to attract bright students to R & D.

o Serious and concerted effort should be put to increase interaction and cooperation amongst the various laboratories of the CSIR, and between the CSIR-laboratories and the industries.

o Due care should be taken to maintain a high level of output from the Relevance - Oriented programme. There should be a balance between the Relevance and Excellence - oriented programmes.

o Relevance-oriented projects should not only cater to the needs of large organisations, they should also attend to short term problems of small and medium industries whose aggregate creation of wealth is quite appreciable. Depending only on large organisations, cannot sustain Relevance - oriented programmes in the long run.

o Mobility of the scientists within the CSIR laboratories, and between the laboratories and the industry should be encouraged for successful transfer of technologies. It can be accomplished only through better incentive packages.

In conclusion, Dr. A. P. Mitra responded to some comments on the various points raised by the peers.

Fifth Research Council Meeting

The fifth meeting of the Research Council (RC) of NML was held on 17th July, 1989 at Central Glass & Ceramics Research Institute, Calcutta under the chairmanship of Dr. P. Rama Rao, Director, Defence Metallurgical Research Institute, Hyderabad. Dr. A. P. Mitra, Director General, Scientific & Industrial Research, participated in the RC as Chief Guest. The following members attended the meeting:

Dr. R. K. Iyengar, Dr. J. J. Irani, Prof. H. S. Ray, Prof. P. K. Rao, Dr. S. K. Gupta, Prof. P. K. Jena, Prof. P. N. Chakraborty, Dr. M. N. Dastur, Mr. S. R. Das and Prof. S. Banerjee.

Dr. B. K. Sarkar, Director, CGCRI, Dr. A. Gopalkrishan, Director, CMERI, Dr. A. Haque, Director, CFRI, and Mr. R. N. Bhargava, Advisor, CSIR, attended the meeting as Special Invitees.

Prof. S. Banerjee, Director, NML, extended a warm welcome to the RC members and the special invitees and said that it was an unique meeting in the sense that all members of the RC attended it. It was the first RC meeting being held outside Jamshedpur and more significant, it was first time that the Director General, SIR attended the RC meeting.

Discussions on R & D Programmes

A. THRUST AREA PROJECTS

Beneficiation and Purification of Tungsten Ores of India (PR No. 12287071)

After an introduction by the Group Leader, Shri N. Chakravorty, the various aspects of the project were presented by Shri S. C. Maulik, Shri Premchand, Dr. V. N. Chaudary and Miss S. Bhattacharya. A thorough discussion followed on every fact of the project.

In conclusion the Group Leader indicated that the project created an expert centre for studies on tungsten ores combining physical and chemical processing techniques under one roof with a dedicated work force.

Processing of Polymetallic Sea Nodules for the Recovery of Metallic Values (PR No. 13283005)

The introduction about the project was given by Group Leader Shri Premchand. Progress on the various aspects of the project was then

1. (L-R) Prof. S. Banerjee, Dr. A.P. Mitra, Dr. P. Rama Rao and Dr. S.K. Gupta, 2. Miss S. Bhattacharya making her presentation in the RC, 3. Dr. A.P. Mitra, DGSIR speaking in the RC, 4. Shri Premchand making his presentation in the RC

presented by Shri H. Patnaik, Shri R. K. Jana, Shri V. Kumar, Shri A. K. Saha and Shri K. K. Gupta.

This project also generated much interest amongst the members of the RC and the Special Invitees, resulting in a lively discussion at length. On the important question of scale of operation Prof. Banerjee informed that, initially attempts were being made on standardising 250 kg/ day scale of operation. Once that was achieved further detailed studies would be conducted to scale - up the process to semi - commercial / commercial scale.

B. INTERACTIVE PROJECT

Beneficiation of low-grade Kyanite and production of high alumina sintered refractories

The progress on this project was presented in two parts - the first part on beneficiation studies, by Mr. N. Chakravorty and the second part on sintering studies by Dr. K. K. Singh.

It was mentioned that the outcome of this project was a result of successful interaction and collaboration between Tata - Steel and NML. It was further pointed out that bulk quantities of beneficiated Kyanite produced at NML had been evaluated by several users and were found to be suitable for manufacture of refractories. The sintered alumina refractories showed very promising properties.

C. EXPLORATORY PROJECT

Development of Fe - Al Inter metallics for High Temp. applications

Dr. O. N. Mohanty introduced the project with an over-view on the topic. He also made a reference to the developments reported from various laboratories of the world and more particularly from the Oak Ridge National Laboratory, USA. This was followed by a presentation on the results obtained and the experience gained at NML in this area by Mrs. A. Bahadur.

Dr. Mohanty informed that the critical processing parameters on Iron Aluminides were not avilable in the open literature.

In response to a question, Dr. O. N. Mohanty informed that the Power Sector, where the heat exchanger tubes and similar other parts were aluminised and calorised, could perhaps be the best user of this material converted into tubular section.

D. SPONSORED R&D PROJECT

Development of Silicon Carbide Whiskers

Dr. A. Ghose, while presenting the project mentioned that, it had already been sponsored by the AR&DB.

On a query on required raw materials, Dr. Ghose replied that agricultural waste products, other than rice husks, could also be used.

It was informed that two patents had already been filed on processes developed through this project.

Presentation of Selected Results Obtained Recently At NML

Selected results on the following subjects were presented by the Young Scientists as usual. These were highly appreciated for their content of innovation :

1. Phase Rule — An analysis : **S. Ranganathan**
2. Development of a Software for Surface Optimisation : **S. Bhattacharya**
3. Can Structural Integrity under Hydrogen Embrittlement Condition be Monitored by Acoustic Emission Technique ? **N. Parida**

Address by The Chief Guest Dr. A.P. Mitra, DGSIR

Dr. A.P. Mitra in his address expressed satisfaction over the outcome of the Peer Review approach vis-a-vis the earlier approach of providing budget for one year, based primarily on financial projections. Long term allocations made on the basis of 'Peer Review', yielded better results from the laboratories, he said.

He expressed his happiness over the highly improved R&D image of NML and also for inducting a sizeable number of very young scientists into the system. He recorded his appreciation by telling that now the NML was one of the best laboratories of the CSIR and he congratulated the scientists and the Director for bringing about this change.

He also appreciated the technical presentations, their order and variety and the facts that they clearly brought out revealing the involvement of the whole scientific community of the laboratory. He stressed the need to increase the External Cash Flow to 33.33% of the Budget of the laboratory and also emphasised the need to improve the Impact Factor of publications.

Concluding Remarks of the Chairman

In his concluding remarks, the Chairman said that, it has been a great pleasure to listen all the presentations of the scientists. On behalf of the RC he thanked all those who took meticuluous care to make the meeting successful. He further said that, the discussions had been very informative and valuable to the laboratory and should provide useful guidance for future coarse of action. The Chairman hoped, that the tempo of development so assiduously established over the last three years would be sustained and improved durings the years to come.

TECHNICAL LECTURES

1. Dr. K. K. Roy, Asst. Prof., Department of Metallurgical Engineering, Indian Institute of Technology, Kharagpur - **Quality improvement of castings-fracture mechanics approach,** on 25th May, 1989. It was jointly organised by NML and Indian Institute of Foundrymen, Jamshedpur Chapter.
2. Dr. S. Ramesh Babu - **Theoretical analysis of the floatability of heavier particles as the surface of lighter liquids,** on 30th June, 1989.
3. Dr. G. R. K. Murthy, Deputy Director, Defence Metallurgical Research Laboratory, Hyderabad - **March for Excellence-NML** and **Liquid Forging Technology,** on 11th July, 1989. It was jointly organised by NML and Indian Institute of Metals, Jamshedpur Chapter.
4. Dr. Amit Chatterjee, Director, Research and Development, Tata Steel - **My impressions on research,** on 7th August, 1989. It was jointly organised by NML and IIM Local Chapter.
5. Prof. S. Banerjee, Director, NML - **Impressions of Thailand visit,** on 7th September, 1989.
6. Dr. A. B. Samaddar, Asst. Prof., Indian School of Mines, Dhanbad - **Modern information technology,** on 18th September, 1989. It was jointly organised by NML and IIM Local Chapter.
7. Prof. K. L. Chopra, Director, IIT, Kharagpur - **Thin film materials,** on 26th September, 1989.

Dr. R. N. GHOSH, HEAD OF COMPUTER DIVISION
Develops a Model for Predicting Creep Life

Consultancy Award

The current design practice for engineering materials against creep is purely empirical and is based on interpolation or extrapolation of the existing data base to the actual operating conditions. Therefore the reliability of the method is often dependent on the availability of experimental data under conditions normally encountered in actual operation. This is extremely difficult to obtain because of the unusually long testing time involved. The Crispen offers an alternative method for Creep Strain Prediction of Engineering Alloys. This is based on the actual mechanisms of deformation and fracture of materials. The parameters necessary to model the creep behaviour of an alloy over a range of stress and temperature can be easily determined from a set of simple creep strain-time plots. This is essentially a computer based design aid which runs on an IBM PC and incorporates facility for the creation of creep-strain database. It has an analysis module to extract the necessary model parameters for the existing database and a simulation module to predict the creep behaviour under any arbitrary operating conditions. This has been developed jointly by Prof. M. F. Ashby of the University of Cambridge and the High Temperature Materials group of the National Physical Laboratory, Teddington, U.K.

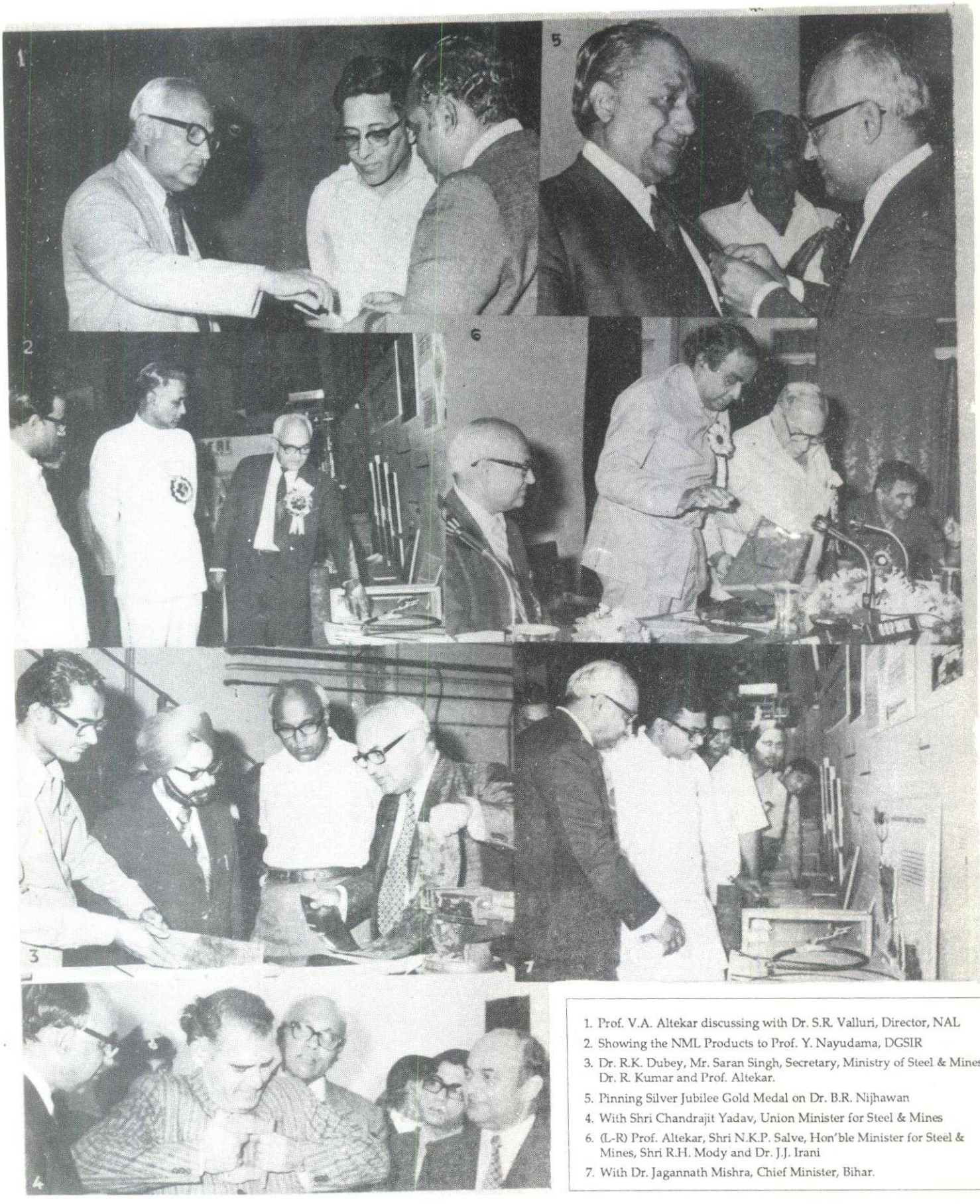
Dr. R. N. Ghosh has been involved in this program since Oct 1988 and his association has led to the development of two additional modules which would enhance the capability of CRISPEN by a significant factor.

One of these can, model the creep behaviour of anisotropic materials such as the nickel based single crystal superalloys currently being used in critical components of modern aero-gas-turbines. <001> is the most preferred orientation because it has the best combination of creep and thermal fatigue resistance. However, the production of castings having a perfect orientation is extremely difficult. Often one has to be satisfied with orientations close to <001>. Such a component would not only undergo a time dependent deformation but also a change in its orientation due to creep. The software developed by Dr. Ghosh can predict both of these on the basis of the model parameters estimated from <001> crystals. This has been used to map the performance of a commercial alloy, SRR99 for all possible orientations and has led to a better understanding of the mechanisms of deformation encountered in these. The other concerns with the extension of CRISPEN approach to a model certain other forms of uniaxial mechanical test such as low cycle fatigue, stress relaxation and constant strain rate. This is based on the principle that the mechanisms of deformation here are similar to those in creep. It has led to the development of an unified model capable of predicting the behaviour of isotropic superalloys under complex loading cycles actually encountered during service. This has been used to simulate the high temperature low cycle fatigue behaviour of IN738LC a

Dr. R. N. Ghosh

nickel based superalloy. The model parameters used were those derived from constant stress creep test data base. The model predicts a reasonably stable cyclic behaviour with significant softening at the later stage as actually encountered during a LCF test on these material.

This offers a scope of rationalising the information received from tests conducted under different loading conditions and significantly reduce the number of tests and testing time required for complete characterisation of the mechanical behaviour of superalloys.



1. Prof. V.A. Altekar discussing with Dr. S.R. Valluri, Director, NAL
2. Showing the NML Products to Prof. Y. Nayudama, DGSIR
3. Dr. R.K. Dubey, Mr. Saran Singh, Secretary, Ministry of Steel & Mines, Dr. R. Kumar and Prof. Altekar.
5. Pinning Silver Jubilee Gold Medal on Dr. B.R. Nijhawan
4. With Shri Chandrajit Yadav, Union Minister for Steel & Mines
6. (L-R) Prof. Altekar, Shri N.K.P. Salve, Hon'ble Minister for Steel & Mines, Shri R.H. Mody and Dr. J.J. Irani
7. With Dr. Jagannath Mishra, Chief Minister, Bihar.

Professional Activities of Prof. V. A. Altekar

Well known for his contributions in the field of extraction and process metallurgy, his work encompases a broad spectrum ranging from beneficiation of low grade ores and minerals to different technologies of metal extraction such as chlorine-metallurgical processes, electrothermal smelting of lead and zinc, powder metallurgy, sponge iron production, utilization of metallurgical wastes, corrosion engineering etc. He published over 100 research papers, 61 Technical reports, 69 articles on various topics of metallurgy, 20 patents, 6 patents filed. He developed 19 R&D processes and 7 processes were utilized by the industry.

Prof. Altekar's professional activities were not restricted to NML alone. As consultant to many metallurgical and mineral industries he was responsible in designing and commissioning of ore-dressing plants, processing of metals, utilisation of metallurgical wastes and preparation of feasibility reports. He visited leading metallurgical centres and was always abreast with the latest technological developments that were taking place around the world.

Prof. Altekar was on the Board of Directors of Hindustan Steel Ltd., Hindustan Copper Ltd., Uranium Corporation of India Ltd., Durgapur Mishra Ispat Ltd. and several state sector corporations. He was also associated with many scientific and technical committees of the Central and State Governments, Educational Technical Institutions, Universities etc. He was also President of the Indian Institute of Mineral Engineering and Council Member of the Indian Institute of Foundrymen.

Prof. Altekar was a member/ executive of several professional bodies leading among them were : American Institute of Mining, Metallurgical and Petroleum Engineers, President of the Indian Institute Mineral Engineers, Fellow of the Indian Standards Institution and Member of the Metallurgical Society of Banaras Hindu University.

He also served on the Board of Directors of several undertakings such as U.P. State Mineral Development Corporation Limited, U.P. Carbide and Chemicals Ltd., Bihar Industrial and Technical Consultancy Organisation Ltd., Adityapur Industrial Area Development Authority and Brindavan Alloys Ltd. He was member of 17 Advisory Bodies.

Consultancy/Sponsored Investigations Completed

Project Title	Sponsored by	Total Commitment
Corrosion investigation of Haldia Mourigram Petroleum products pipe line		Rs. 1.0 lakh
Reduction of Copper content in dump slag.	Indian Copper Complex Ghatsila	Rs. 1.0 lakh
Chemical & Metallurgical tests at NML Field Stations at Howrah, Batala, Ahmedabad, Madras, complex and Jamshedpur.	Local metallurgical/ mineral industries	Rs. 1.23 lakh

PATENT FILED

"An improved furnace for melting of metals" - R. N. Chakraborty, S. Banerjee, S. K. Sinhababu, S. K. Sinha and O. N. Mohanty. Application No. 652/Del/89, dated 25th July, 1989.

PATENTS ACCEPTED

1. Indian Patent No. 164652 (631/ Del/85), dated 25th Oct. 1986. "A process for the preparation of zinc rich primer based on Alkyl Silicate for corrosion protection of steel" - A. K. Dey, A. N. Mukherjee, P. Prabhakaram.

2. Indian Patent No. 164654 (782/ Del/85), dated 16th June, 1986. "An improved process for diffusion aluminising of shaped articles of low carbon steel and low alloy steel" - P. Prabhakaram, A. N. Mukherjee, T. L. Sharma.

3. Indian Patent No. 164311 (246/ Del/85), dated 23rd March, 1985. "An improved process for the production of pure magnesium carbonate from magnesite/ dolomite" - V. A. Altekar, Gurdial Singh, M. L. Dey and N. Dhananjayan.

4. Indian Patent No. 164562 (511/ Del/85), dated 10th July, 1985. "An improved process for the desulphurisation of ferrous metals in the iron and steel industry" - D. J. Chakraborty, S. K. Biswas and V. A. Altekar.

5. Indian Patent No. 164487 (280/ Del/85), dated 25th March, 1986. "An improved process for refining of aluminium and its alloys" - C. S. Sivaramakrishnan, R. K. Mohanty and Rajendra Kumar.

PATENT SEALED

Indian Patent No. 160355 dated 26th September, 1984, sealed on 25th November, 1988 - "An improved process for the preparation of aluminium or aluminium alloys" - Rajendra Kumar, C. S. Sivaramakrishnan, N. K. Das and R. K. Mohanty.

PUBLICATIONS

1. "Studies on the development of improved ramming mass for blast furnace cast house" - B. Chatterjee, B. K. Mitra, S. K. Malaviya, K. K. Singh, P. C. Sen. Presented at the 53rd Annual Session of the Indian Ceramic Society, Jamshedpur, 14-16 September, 1989.
2. "Scope of using LIX 84 for separation of copper and zinc from complex sulphate solutions" - V. Kumar, B. D. Pandey and D. D. Akerkar. Presented at the International Conference on Base Metals Technology, Jamshedpur, 8-10 February, 1989 and published in the Proceedings, P. 495.

IIM - Jamshedpur Local Chapter, EC Membership

The following scientists of NML have been elected as the office bearers of the Executive Committee of Indian Institute of Metals, Local Chapter for the year 1989-90. Mr. K. K. Gupta as Vice-Chairman, Dr. S. Chattopadhyay as Secretary, Mrs. A. Bahadur as Assistant Secretary, and Dr. O. N. Mohanty, Mr. D. D. Akerkar and Mr. Premchand as Members.

MAN POWER DEVELOPMENT

Miss Amita Taneja, Library Assistant was deputed to attend the CDS/ISIS Computer Software Training Programme, organised by CSIR-NISSAT (DSIR) at the Central Glass and Ceramics Research Institute, Calcutta from 5-9 June, 1989.

We are glad that Miss Swati Bhattacharya, Scientist, in the NML Library, was invited to serve as Resource Person in the above CSIR-NISSAT Training Programme.

PARTICIPATING IN FOUNDRY QUIZ

NML team consisting of Dr. C.S. Sivaramakrishnan (Team Leader), Mr. A. Seshu Kumar and Mr. S.K. Sinhababu, participated in the 'Foundry Quiz' organised by The Institution of Indian Foundrymen, Jamshedpur Chapter, on 12th August, 1989.

Mr. Sukomal Ghosh, scientist NML proved to be a successful 'Quiz Master' and made the quiz much more enjoyable with the assistance from Mr. Projjal Basu of NML and other executive body members of I.I.F. Jamshedpur Chapter.

NEW FACILITIES AVAILABLE IN NML LIBRARY

1. Microform Document Reading/ Printing Facility

A microfilm/fiche Reader Printer– Minolta RP–507, has been installed. The total cost of the equipment is Rs. 2 lakhs. This can be used to read document contained in the fiche, roll film, aperture card and micro jacket with printing option.

2. On–Line Searching Facility

On–Line searching facility of scientific & technical databases has been installed at NML's Library and Documentation Section. Now NML can establish contact to the host computer of DIALOG Information Inc., U.S.A., through telex, to conduct on–line searching

STAFF NEWS

We welcome them & wish them a fruitful stay at NML ...

Dr. R. P. Bhagat, Sct. E1, Dr. Pradip Kumar Bhattacharya, Sct. E1, and Shri K. K. Bhattacharya, Sct. 'E1'.

Shri K. K. Paul, Sct. C, Dr. V. R. Ranganath, Sct. C, Dr. Shiva Dhar Singh, Sct. C.

Dr. K. Chandra Sekhar, Dr. Rakesh Kumar and Shri Dipayan Sanyal as Sct. B.

Sarvashri Sanjay Prasad and Swapan Kumar Das as JTA.

Sarvashri Sanjog Prasad, R. Raju, S. Shankar, S. Radhakrishnan, P. Hari Gopal as Jr. Stenographer.

Shri Sanjay Kumar Pal, as Assistant (G).

Smt. Chando Devi, Sarvashri Pradeep Kumar Sharma, Yadav Chandra Mathua, Dayanand Srivastava, Mihir Desai, O. Srinivas Rao as Watchmen. Shri Salim Ansari as Peon. Sarvashri Santosh Kumar Mukhi, Duryodhan Das, Prakash Das, Moti Lal Mukhi, Rajendra Kumar Mukhi as Safaiwala (wet).

We congratulate them on their promotion....

Dr. R. K. Dubey, Dr. L. P. Pandey, and Dr. R. N. Ghosh as Sct. F.

Dr. Inder Singh as Sct. EII, Dr. Swatantra Prakash as Sct. EI.

Shri. A. Majumdar as Senior F & AO.

Dr. Rakesh Kumar, Dr. (Miss) Jyothilata Pandey, Dr. S. Ranganathan, Shri Sridhar Gudipati, as Sct. C.

हिन्दी दिवस समारोह, १९८९

प्रयोगशाला में गत वर्ष की भांति १४ सितम्बर को हिन्दी दिवस का आयोजन किया गया। समारोह की अध्यक्षता निदेशक, प्रो. शीलभद्र बैनर्जी ने की, और इसमें विशिष्ट अतिथि केन्द्रीय सरकार में विधि तथा न्याय मंत्रालय के अपर सचिव श्री ब्रजकिशोर शर्मा तथा अवकाशप्राप्त उप-सचिव श्री हरिबाबू कंसल थे।

इस अवसर पर श्री शर्मा ने कहा कि अंग्रेजी शिक्षा ने देश की साक्षरता कम की है। इसने हमारी विचारधारा को विकृत करने के अलावा, पूरी संस्कृति को कुरूप, नकलची और अवैज्ञानिक बना दिया है। उन्होंने कहा कि विचारणीय है कि आज भी हमें हिन्दी दिवस मनाने पर विवश होना पड़ता है।

श्री कंसल ने हिन्दी में कार्य करने को राष्ट्रीय गौरव तथा संवैधानिक कार्य कहा। बोलचाल की भाषा को लिखित रूप में प्रयोग करना है। अभ्यास से हिन्दी लिखना और कार्यालयों में प्रयोग करना आसान हो जायेगा।

निदेशक प्रो. बैनर्जी ने हिन्दी में कार्य करने के लिये हिन्दी का राष्ट्रीय और समन्वित रूप विकसित करने को प्रोत्साहित किया। उप-निदेशक तथा प्रयोगशाला की राजभाषा कार्यान्वयन समिति के अध्यक्ष श्री केदारनाथ गुप्ता ने अपने स्वागत भाषण में हिन्दी को राष्ट्रीय एकता का माध्यम बताया और कहा कि हिन्दी के माध्यम से ही देश के सभी कोनों तक अपनी बात पहुँचाई जा सकती है।

प्रशासन-नियंत्रक श्री साधन कुमार राय ने कर्मचारियों को प्रबोध, प्रवीण तथा प्राज्ञ हिन्दी परीक्षाओं को पास करने तथा प्राप्त लाभ की जानकारी दी। राजभाषा कार्यान्वयन समिति के सचिव श्री बृज मोहन दत्ता ने समिति का वार्षिक प्रतिवेदन प्रस्तुत किया तथा उपलब्धियों पर प्रकाश डाला।

डा. लल्लन प्रसाद पान्डेय, उपनिदेशक ने धन्यवाद ज्ञापन दिया।

१५ सितम्बर, १९८९ को अधिकारियों\कर्मचारियों के लिये एक हिन्दी कार्यशाला का आयोजन किया गया जिसका संचालन श्री हरि बाबू कंसल और श्री ब्रज किशोर शर्मा ने किया। इस कार्यशाला में प्रतियोगियों को हिन्दी -लेखन का व्यवहारिक प्रशिक्षण दिया गया।

इस अवसर पर आयोजित विभिन्न प्रतियोगिताओं में विजेताओं को श्री ब्रज किशोर शर्मा ने पुरस्कृत किया। पुरस्कार पाने वाले विजेताओं के नाम हैं--

हिन्दी निबन्ध प्रतियोगिता

१. प्रथम - श्री लाल महाराज [हिन्दी भाषी शोध वर्ग]
२. द्वितीय-श्री सुनील कुमार मालवीय
३. प्रथम - श्री संजय कुमार पाल [हिन्दी भाषी अशोध वर्ग]
४. द्वितीय - श्री विनय कुमार

प्रश्न मंच प्रतियोगिता

[क वर्ग ४० से कम आयु]

१. प्रथम - डा. राम प्रवेश भगत
२. द्वितीय - श्री सुकोमल घोष तथा डा. शान्तनु भट्टाचार्य

[ख - वर्ग - ४० से अधिक आयु]

३. प्रथम -डा. श्रीकृष्ण नारंग
४. द्वितीय -श्री त्रिपुरारि लाल शर्मा तथा श्री लाल महाराज

वाक् / कविता प्रतियोगिता

१. प्रथम -कुमारी अनिता सिंह [मिडिल वर्ग कक्षा सात तक]
२. द्वितीय - श्री व्ही. एस. कुमार
३. प्रथम - कुमारी आराधना गुप्ता [माध्यमिक वर्ग कक्षा आठ से दस तक]
४. द्वितीय -कुमारी ओयशी चक्रवर्ती
५. प्रथम - कुमारी पूनम [कालेज वर्ग/उच्चतर माध्यमिक]
६. द्वितीय - श्री अनिन्दय चक्रवर्ती

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद का स्थापना दिवस

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद का स्थापना दिवस समारोह राष्ट्रीय धातुकर्म प्रयोगशाला में २६ सितम्बर, १९८९ को इसके सभागार में बड़े उल्लास से मनाया गया। इस उत्सव के मुख्य अतिथि प्रो. के. एल. चोपड़ा, निदेशक, इण्डियन इन्टीच्यूट आफ टेक्नोलाजी, खड़गपुर थे। डा. चोपड़ा ने इस अवसर पर थिन फिल्म मेटीरियल की नवीनतम उपलब्धियों पर एक व्याख्यान दिया। डा. चोपडा का व्याख्यान प्रत्येक वैज्ञानिक ने सराहा।

इस अवसर पर शहर के अनेक उद्योगों से अतिथि आये थे और प्रयोगशाला के सभी कर्मचारियों ने भाग लिया।

प्रो. चोपड़ा ने उन कर्मचारियों को स्मृति-उपहार प्रदान किये जो प्रयोगशाला में ३० वर्ष व्यतीत कर चुके हैं। जो कर्मचारी इस वर्ष सेवा - निवृत हुए उन्हें भी क्वार्टज़ घड़ियां प्रदान की गयीं।

1. Dr. K.L. Chopra presenting momento to Sh. H.B. Prasad, 2. (L-R) Prof. S. Banerjee, Dr. K.L. Chopra, Mr. K.N. Gupta, 3&4. Hindi Divas Samaroh, 5. Shri Haribabu Kansal, 6. Kumari Aradhana Gupta, 7. Participants in Hindi Essay Competition, 8. Mr. Brijkishore Sharma giving prize to Kumari Anita Singh, 9. Prof. Banerjee with winners of Bridge Team which participated at Union Club Ranchi Tournament.

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